

## **REMARKS / ARGUMENTS**

### **I. General Remarks**

Claims 1-24 are pending. Claims 1, 8, 15, and 20 have been amended.

### **II. Remarks Regarding Amendments to the Specification**

Paragraphs 1 and 24 have been amended to supply the serial numbers required for paragraphs [0001] and [0024].

### **III. Remarks Regarding Rejection of Claims Under 35 U.S.C. § 103(a).**

#### **A. *Nierode* in View of *Surjaatmadja***

Claims 1-3, 6-10, 13, and 14 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 5,890,536 issued to *Nierode et al.* [hereinafter *Nierode*] in view of U.S. Patent No. 5,765,642 issued to *Surjaatmadja et al.* [hereinafter *Surjaatmadja*]. Applicants respectfully traverse on the basis of the amended claims.

#### **1. The Combination of References Does Not Teach Each and Every Claim Limitation**

A *prima facie* case of obviousness requires a showing that all claim limitations be taught or suggested by the prior art. M.P.E.P. § 2143.03. Applicants respectfully submit that a *prima facie* case of obviousness has not been established by the cited references, because the cited references fail to teach all of the limitations of amended independent claims 1 and 8.

In particular, neither *Nierode* nor *Surjaatmadja* teach “fracturing the coal seam using a hydrajetting tool to produce at least one pair of opposed bi-wing fractures formed by erosion of the subterranean formation substantially along a plane of maximum stress” as described in amended claims 1 and 8. While *Surjaatmadja* teaches using a hydrajetting tool in a subterranean formation to create fractures, it does not teach producing opposed bi-wing fractures in a coal seam wherein the opposed bi-wing fractures are formed by erosion substantially along a plane of maximum stress. *Nierode* does not supply this missing element. In fact, *Nierode* does not appear to teach the use of hydrajetting at all. Thus, neither *Nierode* nor *Surjaatmadja* teach all of the limitations of Applicants’ independent claims 1 and 8.

*Surjaatmadja* teaches using a hydrajetting tool to create “microfractures” and further explains that these microfractures may be created through stagnation pressure and hydraulic stresses. *Surjaatmadja* at col. 2, lines 48-59. *Surjaatmadja* further explains that the process of creating microfractures requires relatively high treating pressures at pressures of

approximately two times the pressure required to initiate a fracture in the formation. *Surjaatmadja* at col. 4, lines 48-55. Because of the relatively higher pressures used in *Surjaatmadja*, using the methods of *Surjaatmadja* in a coal seam could result in multiple and random entry points for the fracture fluid to flow into the formation, which when combined with an already tortuous network of pathways within the coal seam formation could result in a complex fracture, which would typically lack a single, dominate fracture. *See Present Application*, para. [0007].

The present application, on the other hand, is directed to coal seams and therefore, the methods of the present application address some of the unique problems posed by coal seams such as the creation of near-well bore stresses. *See Present Application*, para. [0007]. In particular, the methods of the present application may use relatively lower pressures to produce opposed bi-wing fractures in a coal seam wherein the opposed bi-wing fractures are formed by the mechanism of erosion, rather than through hydraulic stresses. *See Present Application*, para. [0022]. By creating opposed bi-wing fractures through erosion, Applicants' methods avoids or at least minimizes the problems of unintended fractures near the well bore. *Id.* Further, as the *Present Application* explains, ". . . the [fractures] are well defined and can be formed along the plane of maximum stress with some measure of precision." *Id.*

*Nierode* also lacks any teaching of the creation of bi-wing fractures formed by erosion. Accordingly, *Nierode* also fails to teach this element of Applicants' claims.

Thus, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection as to independent claims 1 and 8 and correspondingly, dependent claims 2-3, 6, 7, 9, 10, 13, and 14, which depend, either directly or indirectly, from independent claims 1 and 8.

**2. There is No Suggestion or Motivation to Combine the Teachings of the Cited References**

Apart from the cited references failing to teach each and every limitation of Applicants' claims, a prima facie case of obviousness based on a combination of references requires a suggestion or motivation in the prior art references to make the specific combination of elements claimed by Applicants. M.P.E.P. § 2143.01 (citing *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998) (The combination of the references taught every element of the claimed invention, however without a motivation to combine, a rejection based on a prima facie case of obvious was held *improper*.); *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999)

(The level of skill in the art cannot be relied upon to provide the suggestion to combine references.)). Moreover, this suggestion or motivation must be present in the reference themselves. *Nierode* and *Surjaatmadja* contain no such motivation or suggestion to combine their teachings to arrive at the specific combination of elements claimed by Applicants.

Applicants respectfully submit that Examiner has not pointed to any suggestion or motivation to combine the teachings of *Nierode* and *Surjaatmadja* that is present in the cited references themselves. Examiner has provided no evidence or finding of the specific understanding or principle within the knowledge of a person of ordinary skill in the art at the time of the invention that would have supplied the motivation to combine the cited references. See M.P.E.P. § 2143.01. Additionally, Applicants respectfully point out that the Federal Circuit has made clear that “[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” M.P.E.P. § 2143.01 (citing *In re Mills*, 916 F.2d 680,682 (Fed. Cir. 1990)). The M.P.E.P. also makes clear the requirement that Examiner provide objective reasons to combine the references apart from naked statements that “it would be obvious to a person of ordinary skill.” M.P.E.P. § 2143.01 (explaining that “A statement that modifications of the prior art to meet the claimed invention would have been ‘well within the ordinary skill of the art’ at the time the claimed invention was made’ because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.” (citations omitted)).

Examiner writes, in part, as follows:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to create the Nierode et al fractures with the Surjaatmadja tool in order to avoid using mechanical isolation of the seam (*Surjaatmadja*, col.1, lines 48-49).

Office Action at 3. As per M.P.E.P. § 2144.03(C), a conclusion as to the supposed action of a person of ordinary skill in the art is insufficient to establish a *prima facie* case of obviousness. To the extent that Examiner relies on such a statement or statements to supply the necessary motivation to combine or modify the prior art references, Applicants hereby respectfully request under M.P.E.P. § 2144.03(C) that Examiner supply an affidavit or other documentary proof establishing the prior art knowledge that would have motivated a person of ordinary skill in the

art to make the specific modification and/or combination of elements to arrive at Applicants' invention.

Thus, Applicants respectfully submit that it is inappropriate to combine *Nierode* and *Surjaatmadja*. Further, the cited references contain no suggestion or motivation to combine or to modify the references to arrive at the specific combination of elements of Applicants' claims. Thus, Applicants respectfully request the removal of the 35 U.S.C. § 103(a) rejection as to independent claims 1 and 8 and correspondingly, dependent claims 2-3, 6, 7, 9, 10, 13, and 14, which depend, either directly or indirectly, from independent claims 1 and 8.

**B. *Nierode* in View of *Surjaatmadja*, and Further in View of *Zupanick***

Claims 4, 5, 11, 12, and 15-24 stand rejected under 35 U.S.C. § 103 as being unpatentable over *Nierode* in view of *Surjaatmadja* and further in view of U.S. Patent No. 6,280,000 issued to Zupanick [hereinafter *Zupanick*]. Applicants respectfully traverse on the basis of the amended claims.

A prima facie case of obviousness requires a showing that all claim limitations be taught or suggested by the prior art. M.P.E.P. § 2143.03. Applicants respectfully submit that a prima facie case of obviousness has not been established by the cited references, because the cited references fail to teach all of the limitations of amended independent claims 1, 8, and 15.

In particular, as explained above in Section III.A., neither *Nierode* nor *Surjaatmadja* teach "fracturing the coal seam using a hydrametallurgical tool to produce at least one pair of opposed bi-wing fractures formed by erosion of the subterranean formation substantially along a plane of maximum stress." Moreover, the addition of *Zupanick* fails to supply the elements missing from *Nierode* and *Surjaatmadja*. As such, a prima facie case has not been established by the combination of *Nierode*, *Surjaatmadja*, and *Zupanick*, because these cited references fail to teach each and every limitation of Applicants' independent claims 1, 8, and 15, and correspondingly as to dependent claims 4, 5, 11, 12, and 16-24, which depend from independent claims 1, 8, or 15.

Further, Examiner has failed to point to any motivation or suggestion in the cited references themselves that would motivate a person of ordinary skill to make the specific modification and/or combination of elements to arrive at Applicants' invention. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection as to claims as to

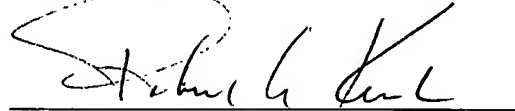
independent claim 15 and dependent claims 4, 5, 11, 12, and 16-24, which depend from independent claims 1, 8, and 15.

**SUMMARY**

In light of the above remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments, or suggestions in furtherance of the prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants believe that no additional fees are due in association with the filing of this Response. However, should the Commissioner deem that any fees are due, including any fees for extensions of time, the Commissioner is authorized to debit the Deposit Account of Halliburton Energy Services, Inc., No. 08-0300, for any underpayment of fees that may be due in association with this filing.

Respectfully submitted,



Robert A. Kent  
Registration No. 28,626  
Halliburton Energy Services, Inc.  
2600 South Second Street  
P.O. Drawer 1431  
Duncan, OK 73536-0440  
Telephone: 580-251-3125  
**ATTORNEY FOR APPLICANTS**

Date: November 15, 2005